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# Development of Functional Graded Materials through Sintering of Layered Metal Powders

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This research explores the development of Functional Graded Materials (FGMs) through the sintering of layered metal powders. FGMs exhibit a gradual variation in composition and properties, allowing for the optimization of mechanical, thermal, and chemical characteristics throughout the component's volume. The methodology involves the layered deposition of different alloys, followed by a sintering process that promotes atomic diffusion and bonding between layers, resulting in materials with smooth transitions between different zones. Layers composed of powders with varying chemical compositions respond differently to stresses, leading to variations and gradual transitions in mechanical properties. This technique enables the creation of periodic, hierarchical, and meso-structured architectures optimized to withstand complex stresses depending on their location. Experimental results highlight the potential of this approach in producing multifunctional components with customizable properties, making them well-suited for advanced applications.

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